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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LY, ANH	

ART UNIT	PAPER NUMBER
2172	11

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/788,459	MOLESKY, LORY DEAN	
	Examiner	Art Unit	
	Anh Ly	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 04/07/2004 have been fully considered but they are not persuasive.

Applicant argued that, "Whang does not teach or suggest processing a multi-level data structure to refine time labels nor does it teach generating multi-level time labels." (Page 3, lines 1-2) and "Nakase does not teach or suggest processing the multi-level data structure to refine time labels or generate multi-level time labels from the refined time labels stored the multi-level data structure." (Page 3, lines 5-7).

2. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

3. Whang et al. of 6,496,817 (hereinafter Whang) teaches providing a subsequence matching method in time-series databases containing indexing time-series data as sequences data representing values at specific time points (col. 1, lines 15-18, col. 4, lines 1-7) and building process to create the time series and matching process to find the time series by using the multidimensional indexes and time series database (col. 4,

lines 28-67 and col. 5, lines 1-8; also see figs 3 and 4 and col. 7, lines 36-62). Time-series data or data sequences is/are a multi-level data structure with a creation of multi-dimensional indexes (col. 4, 8-18).

4. Nakase et al. of 6,230,064 (hereinafter Nakase) teaches generating time series database (col. 5, lines 1-20) and extracting time series data from database and posting or labeling the time series data on the graph or chart (see figs 3, 10's and 11's, col. 5, lines 35-67, col. 8, lines 55-67 and col. 9, lines 1-38).

5. Claims 1-32 are pending in this application.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,230,064 issued to Nakase et al. (hereinafter Nakase) in view of US Patent No. 6,496,817 issued to Whang et al. (hereinafter Whang).

With respect to claim 1, Nakase discloses processing the time labels (along with the time axis, the time-series data is labeled to it in order to indicate a time period such as a day, a week or a month, time axis of time series data: see fig. 3, col. 4, lines 42-63 and col. 5, lines 21-38); generating the time labels (time series data is divided based on the time period such as number of days, number of week or number of months: col. 5, lines 1-20); and labeling the time axis of a graph with multi-level time labels (see fig. 3 and col. 7, lines 32-46).

Nakase discloses time-series database for labeling to the time axis according to division of time axis of time series data, event sequence data, event continuous time, and characteristics of time series (see fig. 3, fig. 10 and fig. 11) and extracting a characteristic change of time series data of the each event (col. 2, lines 30-52). Nakase does not explicitly teach generating time labels by processing input data that includes time based data, creating a multi-level data structure and storing the time labels in the multi-level data structure.

However, Whang discloses a time series data including data occurred in various areas such as stock prices, growth rates of company, exchange rates, biomedical measurements and weather data and called as "data sequences" stored in a time series database with a multi-dimensional index data structure as a multiple levels' data structure) and constructing or generating time series database containing time

sequence as coordinating information as for labeling in the plane and indexes for time series data (see fig. 3 and fig. 4, col. 7, lines 36-62).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Nakase with the teachings of Whang so as to process and generate a multi-dimensional database as a multi-level data structure to store time series data or data sequences and constructing time series data indexes for data sequences (col. 7, lines 36-62). This combination would have made the method for labeling time data in the time axis much faster and reducing number of calls for extracting the time series data from a multi-level data structure time series database based on the index on a multidimensional point or coordinating point on the window or graph or chart or plane (Whang – col. 4, lines 28-67), utilizing the event for displaying or demonstrating the time and event sequence and reducing a quality of time series data to be analyzed as the event (Nakase - col. 2, lines 16-18 and col. 5, lines 25-55) in the graph visualizations by demonstration environment.

With respect to claims 2-4, Nakase discloses a method of automatically labeling a time axis of a graph ad discussed in claim 1. And Nakase discloses extracting characteristics of time series data of each event (col. 2, lines 18-61).

Nakase discloses time-series database for labeling to the time axis according to division of time axis of time series data, event sequence data, event continuous time, and characteristics of time series (see fig. 3, fig. 10 and fig. 11) and extracting a characteristic change of time series data of the each event (col. 2, lines 30-52). Nakase

does not explicitly teach assigning indexes to each time labels in the multi-level data structure and generating axis markers.

However, Whang discloses the multi-dimensional indexes for the data sequences stored in the time-series database (see abstract, col. 7, lines 36-67) and time axis indicators (col. 4, lines 1-8 and lines 48-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Nakase with the teachings of Whang so as to obtain a multi-dimensional database for storing time series data or data sequences and constructing time series data indexes for data sequences (col. 7, lines 36-62). This combination would have made the method for automatically labeling time data in the time axis much faster and reducing number of calls for extracting the time series data (Whang – col. 4, lines 28-67), utilizing the event for displaying or demonstrating the time and event sequence and reducing a quality of time series data to be analyzed as the event (Nakase - col. 2, lines 16-18 and col. 5, lines 25-55) in the graph visualizations by demonstration environment.

With respect to claim 5, Nakase discloses (a) creating an initial set of time labels; (b) determining whether the initial set of time labels will fit along the time axis and if the initial set of time labels fits along the time axis proceeding to step (g); (c) creating an abbreviated set of time labels; (d) determining whether the abbreviated set of time labels will fit along the time axis and if the abbreviated set of time labels fits along the time axis proceeding to step (g); (e) creating a subset of time labels; (f) determining whether the subset of time labels will fit along the time axis and if the subset of time

labels does not fit along the time axis proceeding to step (c); and (g) generating the set of time labels (starting time: see abstract, col. 4, lines 40-67; dividing the time or day into a plurality of period as subset of time: col. 4, lines 57-63 and col. 5, lines 26-67 and col. 6, lines 1-11).

With respect to claim 6, Nakase discloses summing the length of each time label in the initial set of time labels and an inter-label spacing constant; and comparing the sum with the length of the time axis (see abstract and col. 4, lines 40-63).

With respect to claim 7, Nakase discloses summing the length of each time label in the abbreviated set of time labels and an inter-label spacing constant; and comparing the sum with the length of the time axis (col. 5, lines 26-67 and col. 6, lines 1-11).

With respect to claim 8, Nakase discloses summing the length of each time label in the subset of time labels and an inter label spacing constant; and comparing the sum with the length of the time axis (dividing the time or day into a plurality of period as subset of time: col. 4, lines 57-63).

With respect to claim 9, Nakase discloses whereas the step of processing the multi-level data structure to refine the time labels comprises extending the precision of the time labels (col. 10, lines 7-16).

With respect to claim 10, Nakase discloses whereas the step of processing the multi-level data structure to refine the time labels comprises merging the levels in the multi-level data structure (col. 5, lines 21-38).

With respect to claim 11, Nakase discloses generating time labels (along with the time axis, the time-series data is labeled to it in order to indicate a time period such as a

day, a week or a month, time axis of time series data: see fig. 3, col. 4, lines 42-63 and col. 5, lines 21-38); generating the time labels and populating the time labels and refining the time labels and labeling the time axis with the time labels (see abstract, col. 1, lines 6-10; col. 1, lines 46-51; time series database: see fig. 1, col. 4, lines 40-48; col. 5, lines 21-38 and col. 5, lines 1-20; time series data is divided based on the time period such as number of days, number of week or number of months: col. 5, lines 1-20; and see fig. 3 and col. 7, lines 32-46).

Nakase discloses time-series database for labeling to the time axis according to division of time axis of time series data, event sequence data, event continuous time, and characteristics of time series (see fig. 3, fig. 10 and fig. 11) and extracting a characteristic change of time series data of the each event (col. 2, lines 30-52). Nakase does not explicitly teach generating a multi-level data structure to store the time labels; refining the time labels in the multi-level data structure; defining axis markers that will be displayed on the time axis.

However, Whang discloses a time series data including data occurred in various areas such as stock prices, growth rates of company, exchange rates, biomedical measurements and weather data and called as "data sequences" stored in a time series database with a multi-dimensional index data structure and constructing time series database and indexes for time series data and labeling the time series data in the window slides and using heuristic method to create indexes for time series data in order to label with the time axis (see fig. 3 and fig. 4, col. 7, lines 36-62; also see col. 3, lines 5-50 and col. 4, lines 8-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Nakase with the teachings of Whang so as to obtain a multi-dimensional database for storing time series data or data sequences and constructing time series data indexes for data sequences (col. 7, lines 36-62). This combination would have made the method for automatically labeling time data in the time axis much faster and reducing number of calls for extracting the time series data (Whang – col. 4, lines 28-67), utilizing the event for displaying or demonstrating the time and event sequence and reducing a quality of time series data to be analyzed as the event (Nakase - col. 2, lines 16-18 and col. 5, lines 25-55) in the graph visualizations by demonstration environment.

With respect to claim 12, Nakase discloses generating time labels (along with the time axis, the time-series data is labeled to it in order to indicate a time period such as a day, a week or a month, time axis of time series data: see fig. 3, col. 4, lines 42-63 and col. 5, lines 21-38); generating the time labels and populating the time labels and refining the time labels and labeling the time axis with the time labels (see abstract, col. 1, lines 6-10; col. 1, lines 46-51; time series database: see fig. 1, col. 4, lines 40-48; col. 5, lines 21-38 and col. 5, lines 1-20; time series data is divided based on the time period such as number of days, number of week or number of months: col. 5, lines 1-20; and see fig. 3 and col. 7, lines 32-46).

Nakase discloses time-series database for labeling to the time axis according to division of time axis of time series data, event sequence data, event continuous time, and characteristics of time series (see fig. 3, fig. 10 and fig. 11) and extracting a

characteristic change of time series data of the each event (col. 2, lines 30-52). Nakase does not explicitly teach generating a multi-level data structure to store the time labels; refining the time labels in the multi-level data structure; defining axis markers that will be displayed on the time axis and time labels are multi-level time labels.

However, Whang discloses a time series data including data occurred in various areas such as stock prices, growth rates of company, exchange rates, biomedical measurements and weather data and called as "data sequences" stored in a time series database with a multi-dimensional index data structure and constructing time series database and indexes for time series data and labeling the time series data in the window slides and using heuristic method to create indexes for time series data in order to label with the time axis (see fig. 3 and fig. 4, col. 7, lines 36-62; also see col. 3, lines 5-50 and col. 4, lines 8-28); and time labels are multi-level time labels (time series data are stored in a multi-dimensional index database and extracted or retrieved based on the characteristics of time series data via a subsequence matching process accessing the time series database (col. 8, lines 12-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Nakase with the teachings of Whang so as to obtain a multi-dimensional database for storing time series data or data sequences and constructing time series data indexes for data sequences (col. 7, lines 36-62). This combination would have made the method for automatically labeling time data in the time axis much faster and reducing number of calls for extracting the time series data (Whang – col. 4, lines 28-67), utilizing the event for displaying or

demonstrating the time and event sequence and reducing a quality of time series data to be analyzed as the event (Nakase - col. 2, lines 16-18 and col. 5, lines 25-55) in the graph visualizations by demonstration environment.

Claim 13 is essentially the same as claim 1 except that it is directed to a system rather than a method ('064 of along with the time axis, the time-series data is labeled to it in order to indicate a time period such as a day, a week or a month, time axis of time series data: see fig. 3, col. 4, lines 42-63 and col. 5, lines 21-38; time series data is divided based on the time period such as number of days, number of week or number of months: col. 5, lines 1-20; and see fig. 3 and col. 7, lines 32-46; and '817 of a time series data including data occurred in various areas such as stock prices, growth rates of company, exchange rates, biomedical measurements and weather data and called as "data sequences" stored in a time series database with a multi-dimensional index data structure and constructing time series database and indexes for time series data: see fig. 3 and fig. 4, col. 7, lines 36-62), and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 14 is essentially the same as claim 2 except that it is directed to a system rather than a method (see abstract, col. 7, lines 36-67), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 15 is essentially the same as claim 3 except that it is directed to a system rather than a method (time axis indicators:(col. 4, lines 1-8 and lines 48-67), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 16 is essentially the same as claim 4 except that it is directed to a system rather than a method (see abstract, col. 7, lines 36-67), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 17 is essentially the same as claim 5 except that it is directed to a system rather than a method (starting time: see abstract, col. 4, lines 40-67; dividing the time or day into a plurality of period as subset of time: col. 4, lines 57-63 and col. 5, lines 26-67 and col. 6, lines 1-11), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 18 is essentially the same as claim 6 except that it is directed to a system rather than a method (starting time: see abstract, col. 4, lines 40-67), and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 19 is essentially the same as claim 7 except that it is directed to a system rather than a method (col. 5, lines 26-67 and col. 6, lines 1-11), and is rejected for the same reason as applied to the claim 7 hereinabove.

Claim 20 is essentially the same as claim 8 except that it is directed to a system rather than a method (dividing the time or day into a plurality of period as subset of time: col. 4, lines 57-63), and is rejected for the same reason as applied to the claim 8 hereinabove.

Claim 21 is essentially the same as claim 9 except that it is directed to a system rather than a method (col. 10, lines 7-16), and is rejected for the same reason as applied to the claim 9 hereinabove.

Claim 22 is essentially the same as claim 10 except that it is directed to a system rather than a method (col. 5, lines 21-38), and is rejected for the same reason as applied to the claim 10 hereinabove.

Claim 23 is essentially the same as claim 1 except that it is directed to a computer program product rather than a method (064 of along with the time axis, the time-series data is labeled to it in order to indicate a time period such as a day, a week or a month, time axis of time series data: see fig. 3, col. 4, lines 42-63 and col. 5, lines 21-38; time series data is divided based on the time period such as number of days, number of week or number of months: col. 5, lines 1-20; and see fig. 3 and col. 7, lines 32-46; and '817 of a time series data including data occurred in various areas such as stock prices, growth rates of company, exchange rates, biomedical measurements and weather data and called as "data sequences" stored in a time series database with a multi-dimensional index data structure and constructing time series database and indexes for time series data: see fig. 3 and fig. 4, col. 7, lines 36-62), and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 24 is essentially the same as claim 2 except that it is directed to a computer program product rather than a method (see abstract, col. 7, lines 36-67), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 25 is essentially the same as claim 3 except that it is directed to a computer program product rather than a method (time axis indicators:(col. 4, lines 1-8 and lines 48-67), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 26 is essentially the same as claim 4 except that it is directed to a computer program product rather than a method (see abstract, col. 7, lines 36-67), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 27 is essentially the same as claim 5 except that it is directed to a computer program product rather than a method (starting time: see abstract, col. 4, lines 40-67; dividing the time or day into a plurality of period as subset of time: col. 4, lines 57-63 and col. 5, lines 26-67 and col. 6, lines 1-11), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 28 is essentially the same as claim 6 except that it is directed to a computer program product rather than a method (starting time: see abstract, col. 4, lines 40-67), and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 29 is essentially the same as claim 7 except that it is directed to a computer program product rather than a method (col. 5, lines 26-67 and col. 6, lines 1-11), and is rejected for the same reason as applied to the claim 7 hereinabove.

Claim 30 is essentially the same as claim 8 except that it is directed to a computer program product rather than a method (dividing the time or day into a plurality of period as subset of time: col. 4, lines 57-63), and is rejected for the same reason as applied to the claim 8 hereinabove.

Claim 31 is essentially the same as claim 9 except that it is directed to a computer program product rather than a method (col. 10, lines 7-16), and is rejected for the same reason as applied to the claim 9 hereinabove.

Claim 32 is essentially the same as claim 10 except that it is directed to a computer program product rather than a method (col. 5, lines 21-38), and is rejected for the same reason as applied to the claim 10 hereinabove.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on 703 305-9790.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 7872-9306 (Central Official Fax number)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or (703) 305-3900.

JEAN M. CORRIELUS
PRIMARY EXAMINER

ANH LY
APR. 28th, 2004